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DEMOGRAPHICAL AND ANTHROPOLOGICAL INVESTIGATION OF THE POPULATION OF THE COMMUNITY OF GYOMA (COUNTY BÉKÉS, HUNGARY)

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Abstract

The author analysed the statistics on birth-, marriage- and death-rates for the community of Gyoma (County Békés) in Hungary. He established the monthly distribution and, in the case of births and deaths, the differences in sex shown in the registration of births, marriages, and deaths in the years between 1895 and 1970. He drew conclusions about the natural increase in population, as well. He refers also to the frequency of twin births. The statistics on causes of death with according to decades and disease groups.

His anthropological survey of 1974 included 672 boys, 770 girls, resp. 690 males and 767 females. He involved practically every fifth grown-up in the investigation, and in the case of 409 girls he collected data on the menarche, too. On the basis of these data, he drwas some conclusions concerning the physical development of children, as well as the taxonomical composition of grown-up.

Introduction

In County Békés, of late years, as a result of a very valuable initiative (NAGY, 1965), the local monographs intending to record historical, archaeological, and ethnographical data, and the traditions of some settlements for posterity, have succeeded one another. And we are even more pleased to be partipating now in the third such volume. We are glad to see that, in addition to the disciplines mentioned above, anthropology can contribute, too, with its results to a systematical knowledge of the comunity investigated. Such works e.g., the works at Gyoma, give us considerable help in the formation of an increasingly true picture of the anthropological features of the present-day Hungaryan people.

In the following, we wish to outline the main characteristics of the work carried out at Gyoma and evaluated in detail (FARKAS—HUNYA—VARGA, in the press; FARKAS, in the press).

Demographical data

As we want to give the anthropological features of the population at Gyoma, we can not leave out of consideration the social relations, either, that have long accompanied the individuals, characterized by three main events in their lives: marriage, birth, and death. In the course of cellecting data, we endeavoured to cover these events as well.

1. Marriages

In Gyoma, between October 1895 and December 1970, 7483 marriages were centraeted altogether. The greatest number of marriages (1192) took place between 1921 and 1930, while the least (839) — taking into consideration that between 1891 and 1900 not all the data are at our disposal — occurred in the decade between 1961 and 1970. If we observe the annual occurrence, we see that the greatest number of young (162) couples stood before the registrar in 1919 and the least (24) in the same decade, in 1915. It seems very probable that both of these data (indicating maxima and minima) are connected with the beginning and end of World War I.

Proceeding with analysing and investigating our data monthly, too, we find that the maximum is held by the November of 1898 when, during one month, 42 marriages were contracted. The number of months without weddings were on the other hand, very rare in Gyoma. These were: March 1896, July 1903, November and December 1906, January and July 1915, January and February 1916, August 1928, April 1935, November 1944, January 1961.

The implications of the summarized monthly distribution of contractions of marriage is, however, a good deal more interesting. If we take the number of marriages contracted during one year as 100, then it is evident that, in the case of a uniform distribution, 8.33 per cent (100:12=8.33) would fall in a single month. Investigating the data with full knowledge of these facts, it becomes immediately striking that this expectable value is only surpassed in October, November, and December, and approached in January out of the twelve months. In the case of the other months, the ratio of marriage contractions remained below the value to be expected. In another words this means that at Gyoma in the last seven and half decades, contractions first of all fell in the winter season and particularly in the months of November and December. This is not surprising at all. We got quite a similar result from analysing the data of Vésztő in County Békés, as well (FARKAS—VARGA, 1973), as well as those of Tápé in County Csongrád (FARKAS, 1973). This can be explained by the fact that, particularly in the case of an agricultural population, marriages were contracted as a function of the economic year. Marrying off with a dowry, the supply with a trousseau could mainly be provided by means of a good crop. This is proved very well by the number of marriage contractions during the decades 1921 to 1930 and 1931 to 1940. While in the previous decade 1192 marriages were contracted, in the following decade — as a result of the great economic crisis — this number was only 924.

In any case this event is connected not only with economic factors. A great part was played in this respect by religion, too. This is shown very well by the number of nuptial ceremonies performed in the communities Gyoma and Tápé. Particularly in the case of the Roman Catholic population of Tápé, the month of December is conspicuous by the low number of marriages contracted, because marriage contracts in the time of Advent have been "prohibited" by the traditions of the R. Catholic population. The same prohibition does not appear in the Calvinist population of Gyoma. It is interesting anyway, too, that since the Liberation the time of contracting marriages is no longer determined as strongly as before by religious conventions, and the number of December marriages is growing more and more in the population of Tápé, as well.

There is another interesting thing, as well. Between 1895 and 1960 marriages were mostly conctracted in the months of November and December. Between 1961 and 1970, however, the situation changes. The maximum falls in August, the month that

was remarkable for its low number in the earlier decades. What could have be the cause of this? It is beyond question that we are in this case, too, up against a change in convention. The people of Gyoma — as known from elderly persons — placed the whole house at the disposal of the young people at the time of wedding. This, however, does not solve the problem in present-day flats of smaller area. It is thus a factor that weddings are not celebrated at home but in an inn or restaurant in the community or the couple rent a large-sized tent where there is plenty of room for the considerable number of guests invited. A precondition of this is, however, good weather and, for that, August is the most suitable month.

The demographical characteristics of the population can be interpreted correctly above all not in the form of absolute numbers. The changes per 1000 people are generally given. It appears from a compilation of this character that the value 11.1 from 1900 decreased during ten years — even if not considerably. In 1920 that was followed by a major rise, diminishing considerably again by 1941. And finally, in 1949, after a strong growth, there followed a new decerase. The first two periods, and the rise following them, is obviously connected with the war years, while the rise after the Liberation and the decrease following it may have had a connection with the questions of family planning and economic problems. The contraction of marriages occurring per 1000 persons can be noticed to major extent in the birth rate in 1960 only.

2. Births

In the period investigated by us 19086 children, were born 9880 of them being boys and 9206 girls. The birth rate of boys and girls was 1000 to 932 in favour of boys.

The most children (2080 boys and 1949 girls) were born between 1901 and 1910 while the fewest (803 boys and 698 girls) between 1961 and 1970. It is shown by summing up that beginning from 1921 generally 120—460 fewer children were born and the birth rate shows a declining tendency. The difference between the numbers of births in the decades 1921 to 1930 and 1961 to 1970 is —1226. The same tendency manifests itself — obviously in connection with births — in the decrease in population-number because between 1920 and 1970 the population number of the community became — on the basis of census data — less by 1287 persons.

Taking into consideration the annual frequency of births, we see that the most births (484 children) were in 1900 while the fewest (96) were in 1960. Apart from 1963, a year of still lower births numbers (the maternity home was rebuilt then), the number of births fell below 100 only in 1960. From 1961 to 1970 an ascending tendency manifested itself again, being largerly a result of a new demographical policy extended over the whole country.

The most boys (232) were born in 1896, and the most girls (233) in 1900 while the fewest boys (49) in 1961, and the fewest girls (35) in 1960.

During the seven decades the most children (1734) were born in August, and March (1730) while the minimum number of births (1458) falls in the month of November. Taking for our basis the birth maxima, it emerges that the birth maxima in August correspond to the wedding maxima in November. That is to say, the marriage contractions are followed by the births in nine months. If we co-ordinate with every month (contraction of the marriage) its following ninth month (of birth), we see that in five out of the twelve months the corresponding frequencies are in proportion to each other.

But the entirely certain connection between the contractions of marriages and births can only be analysed exactly through the birth data of the first child. Without being able to cheek, it seems to us that there is no major postponement between the contraction of marriage and the birth of the first child. This is to be emphasized because, in the case of the population of Tápé, we saw that contractions of marriages are not followed by births in the ninth month (FARKAS, 1973). In this case, therefore, there is deliberate birth control.

At the same time, the March and August maxima of numbers of births coincide with the maxima of boy births in August and girl births in March. The fewest boys (747) were born in June, the fewest girls (683) in December.

The expectable 8.33 per cent frequency of births is reached and surpassed by the months January, March, May, July, August, September, and October. The distribution is, therefore, much more uniforms as compared to the marriage contractions. It is also shown by the fact that even the August maxima hardly surpass 9 per cent.

Between 1900 and 1949, the numbers of births occurring per 1000 persons decreased from 32.5 to 17.4. This decrease may be considered uniform in 1960 but it was, however, followed by an extremely marked decrease in the birth rate which appeared in the natural incerase of population, as well. Fortunately the birth rate, which was 8.4 in 1960, rose to 21.2 in 1970.

We have to speak separately about twin births. During the period investigated 164 pairs of twins were born and one set of triplets. The numbers of male and female pairs of twins are approximately identical while the numbers of mixed twins surpass by about 10 per cent the numbers of boy-boy and girl-girl twins. 166 boys and 165 girls were born as twin pairs, i. e. the birth of 1006 boy twins and 1000 girls twins occurred. This differs from the national value in 1968 that was 1000 to 1016 (ACSÁDI—CZEIZEL, 1970).

Most twins (14.6 per cent) were born in the month March, then follows the month February with exactly 11 per cent. Apart from these, only the birth rates in April and July surpass an 8.33 per cent frequency.

The annual distribution of twin births is not uniform, either. Most twin pairs (8) were born in 1897, followed by 1896 when five pairs of twins and one set of triplets were born. Only four twin pairs were born in four years (1898, 1899, 1950, 1951), too. So it seems that there occurs a year with four twin pairs in every 50 years, and a year with three twin pairs in about 30 years. 8 to 9 twin births occur in every 1000 births. This number is lower than the value established for the situation in the whole country (ACSÁDI—CZEIZEL, 1970), the latter being 18.2 per 1000 in 1968. The frequency of twin births occurred in the population of Gyoma with half as much probability as in the whole population of the country. One twin birth occurs in fact, in every 117 births. According to Hellin's hypothesis (HELLIN, 1895; ZELENY, 1921), if a twin birth falls in every n births then a triplet birth falls in everi n^2 births. On the basis of our former data, therefore, at Gyoma a triplet birth falls in every $117^2 = 13\,689$ births. That, however, followed only on one occasion among more than 19 thousand births and, if we can believe the former supposition, we have to say that in the immediate future the birth of triplets should not be considered as an extraordinary event.

There are families in which twin births occurred more frequently. Thus the parents with the surnames KOVÁCS (14), NAGY (13), FEKETE and TÓTH (8), KIS and SZABÓ (7), HAJDÚ and SZILÁGYI (5) play most part in our records of twin births.

These nine surnames occur in 72 cases of the 165 twin births. The tirplets were born, too, as children of a father named Fekete and a mother named Nagy.

3. Death

Deaths were investigated in three respects.

It appears from the analysis of deaths of both sexes in every decade and month that between October 1895 and December 1970 there were recorded 14 868 death cases altogether, of which 7748 were males and 7120 females.

The number of deaths occurring per 1000 persons decreased from 30.0 to 9.2 between 1900 and 1970. That may be considered as a considerable decrease which is connected with the greater and more improved health service, the prevention of diseases (regular pulmonary screening), and mainly with the decrease in infant mortality.

The greatest number of deaths occurred in the month of December (1383) while the least (1064) were recorded in the month of September. The most males (787) died, too, in December while the most female death cases (687) occurred in the month March. The fewest males (567) and the fewest fameles (497) died in the month of September.

As compared to the 8.33 per cent theoretical distribution, a major death rate occurred first of all in the winter and spring months (from December to May inclusive). The summer and autumn months (from June to November inclusive) do not reach this expected value.

Investigating the single years separately it turns out that the most death cases (346) were in 1900 while the fewest (77) in 1966. The most men (216) died in 1944, and 1915—1916 (189, resp. 188) while the most women (170) in 1900. With males, the high mortality rate that took place in the years mentioned is mainly connected with the events of World Wars I and II. Both the fewest males (40) and the fewest females (37) died in 1966. At the annual summing up theer was one more peak shown in 1918, as well, engendered by a rather considerable pneumonic disease and its complications taking place in the period from October to December 1918. In the period mentioned sixty-five, mainly juveniles died.

Surveying the months in the seventy-five years, we find that the most men (53) died in December 1917, the most women (30) in October 1918. From among the single months, there occurred no male death in September 1968 and no female death in October 1953.

In death cases the second aspect of the investigations was the distribution of death cases according to age-groups. We used the following age-categories: 0 to 1, 2 to 5, 6 to 10, 11 to 15, 16 to 20, 21 to 30, 31 to 40, 41 to 50, 51 to 60, 61 to 70, 71 to 80, 81 to 90, 90 to x.

It appears from the analyses that the death rate of those below one year amounts to 20.8 per cent. That may mainly be attributed to the extremely high infant mortality at the beginning of our century. The number of children not surviving their first was 1086 between 1901 and 1910 but only 12 between 1961 and 1970. The improvement is particularly considerable between 1951 and 1970 which may be attributed to the increased care introduced and brought to the expectant mothers and young children in the period after the Liberation. This improvement stands the test even in the case of comparing it with data abroad. While e.g. in Austria the mortality of 1 to 5 year-old children (taking the data from 1901 as 100 per cent) had decreased by 90.9 per cent by 1960 (CZERMAK—HANSLUWKA, 1963), in the population of Gyoma,

during the same period, the decrease was 92.4 per cent among 2 to 5 year-old children.

The number of those who died at over 90 years of age has increased more and more since the beginning of the century up to our days. While between 1901 and 1910 only three men and two women lived longer than ninety years, between 1961 and 1970 the number of these rose to twenty-one men and twelve women. During the 75 years, not more than one man lived to 100 years, dying in November 1907. In the case of those over 95, we have learned that since the beginning of the century till the Liberation four men and three women outlived 95 years while during the following twenty-five years, six men and nine women reached these high ages. In this a role is played, apart from the improvement of health conditions and the rise in length of life demonstrated in the whole country, too, by the more considerable social welfare (e.g., old-age pension, health provision, medical attendance, etc.), extended over the agricultural population, as well. To reach a higher age of life is anyway characteristic anough of those carrying out physical work (ACSÁDI—KLINGER, 1962).

The third aspect in analysing death cases was to study the causes of death. It is very difficult to decide unambiguously in every case, on the basis of registry recordings, what the cause of death was. In order to avoid major distortions, we divided the diseases into larger groups, arranging them statistically according to the causes of death. In the course of analysing these we reached some very important conclusions.

One of these is that the extremely high ratio (38.8 per cent) of those died from diseases of the circulatory-system is linked to the fact that such diseaes occur with a very high frequency in this population, as well. From this point of view, the decade between 1911 and 1920 is particularly conspicuous. From 1941, the number of these diseases nearly doubled till 1970. The diseases of the circulatory-system are, according to the data from 1961 (MARTON, 1961), the main causes of death in the Hungarian situation, as well. While, however, in 1957, this disease group was a cause of death at a rate of 25.4 per cent in the national situation, at Gyoma, in the same year, it plays a part as a cause of death at a rate of 60 per cent. In 1958, the picture is quite similar: the national frequency is 25.9 per cent, that in Gyoma 60.2 per cent.

From among the reasons causing death, senile decay takes second place (a round 12 per cent). The interpretation of this is extremely difficult and it involves a state of affairs which had previously been badly interpreted. In the national situation in 1957—1958, this disease group took fifth place among the causes of death.

The number of diseases caused by infection and parasites also seem to be high (round 9 per cent), taking in Gyoma third, and in the national situation eighth, place among the causes of death. This comparison is, however, distorting. Such diseases were namely characteristic in Gyoma first of all of the period before 1940.

The situation is about the same in death cases caused by diseases of the respiratory system, which take fourth place both at Gyoma and in the national situation. The frequency of these, however, does not reach the value established for the whole country in 1957—1958 in the case of seventy years, either (MARTON, 1961).

The next places for causes of death are taken by perinatal morbidity and mortality. These were characteristic first of all at the beginning of the century and their number has considerably decreased in the last twenty years. The cause of this is in connection with prenatal care and the delivery in hospitals, maternity homes.

It must, unfortunately, be stated that the death cases engendered by accidents, poisonings, and violence (amongst others suicides) reach the national level, as well.

It is without doubt, however, that the number of these have shown a declining tendency since the beginning of the century, and have fallen to about one-half during seventy years.

In our statistics about causes of death, the number of death cases caused by tumourous diseases takes seventh place, with a frequency of 5.1 per cent. As compared to the national data of 1957—1958, this shows a favourable picture in the course of seven decades, because, in the years mentioned, this death-causing disease group took second place in national relations. It makes us think rather that the number of tumourous diseases has increased about threefold at Gyoma since the beginning of the century till 1970. This is confirmed by the fact, too, that while in the national situation tumourous diseases caused death at a rate of 15.3 per cent in 1957 and of 16.7 per cent in 1958, at Gyoma, in both the years mentioned, they resulted in death at a rate of 17,6 per cent. This rise is, therefore, a little above the national average, although the percentage of carcinoma-induced deaths is the smallest in the national situation particularly the case of the social strata that carry out physical work in agriculture (KLINGER, 1963).

From among the disease groups playing a part at a frequency lower than 5 per cent, we are emphasizing only war casualties belonging essentially to the group of deaths by violence. The population of Gyoma lost 271 persons in World War I, and 213 persons in World War II.

4. Natural increase in population

In the course of comparing the statistics of births and deaths, we may get a picture about how the natural increase in population developed at Gyoma. After analysing these data, it turns out that between October 1895 and December 1970 the population of the community increased by 4218 persons. More exactly, it should have increaseed by so much. From the number mentioned, 2132 are males and 2086 females.

We get, however, a quite different picture if we take into consideration the census returns, as well. The development of population was namely the following on the occasion of the individual national censuses (Census of the year 1970):

In 1870	9907 persons, in 1930	12 244 persons,
in 1880	10 160 persons, in 1941	12 242 persons,
in 1890	10 867 persons, in 1949	11 577 persons,
in 1900	11 545 persons, in 1960	11 367 persons,
in 1910	11 699 persons, in 1970	10 655 persons.
in 1920	11 942 persons.	

Accordingly, therefore, the number of the population of Gyoma increased from 1870 to 1930 and since then it has continuously decreased. Taking the census data from 1890 and 1970 as our basis, the natural increase in population is not more than 788 persons. Comparing therefore the data from the register and census, we can establish that, out of the natural increase, 3430 persons emigrated from the community in the course of seventy years. It is probable, however, that the emigration was much larger than this because, at the same time, from other settlements, mainly from the adjacent Endrőd, some immigration took place to Gyoma. The cause of these large changes in population will surely be explained by means of historical data.

On the collection of anthropological data

Having surveyed the demographical changes at Gyoma, our interest turned to the scientific aspects of problems. So as to provide ourselves with concrete data in this respect, as well, between October 22 and November 14, 1974 we collected data concerning partly the children, partly the grown-ups.

In the case of children, we measured the three main characters (body weight, body height, normal chest measurement) that determine physical development. In the case of girls, we asked, by means of questionnaires also for information on the time of the menarche, as an indication physiological maturity.

In the case of grown-ups, the collection of data was carried out contemporaneously with pulmonary screening, applying the earlier-used forms of examination (FARKAS—LIPTÁK, 1971; FARKAS—VARGA, 1973). We carried out our measurements according to the directions of Martin and Saller (MARTIN—SALLER, 1957—1966). For the taxonomical analysis photographs were made of every individual from three angles (full face, three-quairters view, profile). We evaluated the collected statistical material using biometric methods, by means of an R—20 type electornic computer. (For preparing the programme necessary for computation and for running the data, we wish to record here, too, our gratitude to P. HUNYA, senior research fellow).

On the basis of these data, as well as of detailed analyses (FARKAS—HUNYA—VARGA, in the press; FARKAS, 1975) we drew some conclusions, the essence of which we wish to summarize here, first of all concerning juveniles.

Physical development of children in Gyoma

In Gyoma we measured 672 boys and 770 girls, and asked 409 girls pupils for information is respect of their age of menarche. Knowing the data of birth and the time of investigation, we divided the children — according to the formula of the year of age completed ± 3 months — into six-month groups. The considerable parameters of body weight, body height, and normal chest measurement (n, w, $\bar{x}$, s, s^2) were established for every age-category.

The value of the menarche-median is extremely low: Me = 12.79 years. That means that in the case of 50 per cent of the girls in Gyoma menstruation appears at the age of $12^3/_4$. This considerably differs from the median applicable to the whole country, ascertained in 1963 (13.2 years, BOTTYÁN, etc., 1963), and it is by about 0.1 year lower than the median of the girls in Vésztő (FARKAS—VARGA, 1973). And it considerably differs from the Transdanubian median, as well, established on the basis of several data (EIBEN, 1968). It is interesting that, at the same time, it is very similar to the medians of the years 1959—1960 in Budapest, Debrecen, Szeged, and County Nógrád (BOTTYÁN, etc., 1963). It seems to us, therefore, that in the case of the children in Gyoma, the phenomenon of acceleration (or stopping of retardation), demonstrated in children in the Hungarian situation, as well, is still in process.

An interesting connection was shonw in the course of some investigations between the month of birth and that of menarche coinciding. With the girls in Western Hungary a connection was established between these two phenomena (EIBEN—BODZSÁR, 1970), while with those in Southern Hungary we did not observe the same coincidence (FARKAS, 1971). In this respect, the girls in Gyoma are more comparable

to the children in Transdanubia because the expectable 8.33 per cent coincidence is to be found in their case at the rate of about 13 per cent.

The seasonal fluctuation of the appearance of the menarche in the case of girls in Gyoma is suprising, as well. In the case of girls in County Csongrád the menarche takes place in 39.3 per cent in the winter period (FARKAS, 1962), while in Gyoma the highest frequency falls in the summer months. We mention only as a possibility that there might be supposed a possible connection between the effect of the thermal bath at Gyoma and the event that the menarche of girls mainly results in the summer season.

After studying the body sizes we established that the physical development of children in Gyoma might be considered good even if the slight backwardness in body size found in every child population in the country (village) as compared to the children in towns, manifests itself in their case, as well. It will have been a result of the improvement in the essential conditions and of Gyoma being urbanized that in 10 to 15 years the body measurements of the children of the same age sex will be still larger.

Anthropological characterization of the adult population

In the greater community of Gyoma, in October and November 1974 we involved 1457 males and females, more than 18 years old, in the anthropological investigation. As compared to the census data for the year 1970, that means that the 690 males represent 19.6 per cent of the men belonging to the corresponding age-group, and the 767 females 19.2 per cent of the corresponding female age-group. We therefore investigated practically every fifth grown-up at Gyoma.

We divided our statistical material into four age-categories (18—23, 24—40, 41—60, 61—x years), taking into consideration the time of birth and that of investigation.

It could be established on the basis of the birth-places of the persons examined (as well as on those of their parents and grandparents) that from among the 1457 persons 1267, i.e., 87 per cent, were natives of Gyoma.

The conditions obtained in the course of the census of 1970 are reflected in the ratio of sexes. The distribution according to age-groups may be considered good.

The individuals examined were divided into two groups on the basis of the birth-places parents and grandparents:

— autochtonous inhabitants of Gyoma, and
— non-autochtonous inhabitants of Gyoma.

By the help of this distribution, about 66 per cent of the material of our investigation may be regarded as autochtonous inhabitants of Gyoma. In our opinion and by reason of the information obtained a much lower percentage of the present-day population of Gyoma may be considered as autochtonous inhabitants of Gyoma according to the above criteria. Our sampling can be regarded on this basis as representative of the autochtonous inhabitants of Gyoma.

In the course of investigating the anthropological characters, the following summarizing characterization may be given of the persons investigated:

Males

They are mostly tall or medium-tall (167—180 cm tall), the head is long or medium-long, mostly broad, high or medium-high. Forehead is broad. The face is broad or medium-broad, varying from low to high, but it is mainly medium-high. The lower jaw is very broad. The nose is medium-broad or broad. The hair is mainly blackish-brown or black. Red, reddish-blond or blond hair occurs only rarely. From among the eye colours blue and green are the most frequent. According to the combination of both characters mainly the joint occurrence of a rather dark hair colour and lighter eye colour can be observed. The form of hair is generally sleek.

On the basis of the indices, males are characterized mainly by a short and very short head (brachy-, hyperbrachycephalism), high head (hypsicephalism), and on the basis of the breadth and height measurements of the head by a medium head (metriocephalism), a broad or medium-broad forehead (metrio-, eurymetopia), first of all a broad face (euryprosopia), a medium-broad jaw (on the basis of the jugomandibular index), and a narrow nose (leptorrhinia).

Females

The stature of females may be from small to big with comparatively equal frequency. None the less, it may first of all be regarded as medium-big or big (156—168 cm). The head is definitely long, broad, high. The forehead is broad. The face is broad or medium-broad, medium-high, possibly low. The lower jaw is broad or very broad. The nose is medium-broad or broad. The hair as that of the males, is mainly dark brown, blackish-brown or black. Anyway, those with lighter brown hair are in the majority. In their case, too, the hair is sleek, although wavy hair occurs more frequently here than among males. From among the eye colours, mainly a greenish shade, lighter blue and lighter brown eye colours occur the most frequently.

According to the indices, they have mainly a short or very short head, as well. In addition, the head is high, medium-broad, the forehead medium-broad, the face mainly broad although medium- and very broad faces are frequent, as well. The mandible is medium-broad, the nose narrow.

Changes in the age of life

The differences according to age-groups appear first of all in stature. Thus among the younger men tall ones occur much more frequently than among the old men in whose case, owing to old age, the ratio of those with smaller stature becomes gradually higher. It is interesting to observe that the head becomes more and more elongated and to some extent narrower as the age of life progresses. The forehead also grows narrower. The face and lower jaw become, at the same time, broader, the head lower. The increase in the height of face together with the age of life is a slightly peculiar phenomenon. The nose grows broader.

In the case of females, the ratio of the shorter ones considerably increases, as well, in their older age of life. In the lenght of head no considerable change can be observed. At the same time, however, the number of those included in the category of broad ones decreased with the advancesment of the age of life and the ratio of those with medium-broad head increases. The head becomes therefore narrower. With the forehead the same phenomenon can be observed. The face grows broader

and this may be noticed in the lower jaw, as well. The height of face, at the same time, is shifted towards the lower values. The head becomes higher and the nose broader.

The formal variation of the hair develops in a different way in case of the two sexes. In males, as the age of life advances, the number of those with wavy and curly hair decreases and those with sleek hair proportionately increase. In females, as compared to the younger age group, the number of those with sleek hair first decreases then in an older age group considerably increases and, in the meantime, the ratio of those with wavy hair considerably increases in 24 to 60 year-olds. The latter event may probably be explained by artificial intervention (hair-treatment).

Changes in the autochtonous character

We have not observed any considerable changes in the sample considering the autochtonous character. The cause of that seems to be obviously that there is a great mxing in the community. And another cause may have been, too, that many of the so-called non-autochtonous persons could not give exactly the birth-places of their parents and grandparents.

Taxonomically distribution

By means of the data obtained in the course of collections we strove to establish character-complexes and identify them, if possible, with the single categories of Litták's taxonomical classification (LIPTÁK, 1969) (a short characterization of these is similarly given by treating single types, similarly following LIPTÁK).

The persons examined by us showed a very varying picture in the domain of character-combinations, and a full identification with the taxonomical categories mentioned above was in some cases not possible. It was striking, too, that in the population the characteristics face-profile of the Armenoid race (protruding, hooked nose, receding and chin) very often occurs.

In Table 1 we recorded the groups separated by us and we also showing photographs of the taxons considered as the most characteristic for illustrating these.

From a taxonomical point of view, there is no considerable difference between the autochtonous and non-autochtonous populations. The little difference manifests itself first of all in case of the Pamiric and Armenoid races in females. But it appears in the case of males, too, because these races mainly occurred in the autochtonous population of Gyoma. The individuals regarded as gracile Mediterraneans are found among the autochtonous females in larger numbers.

Nordoids

This human race is characterized by big-medium or big stature, a long head or medium-long head, narrow face, light complexion (blond hair, light blue eyes, white skin). In the material of our investigation they are represented by not more than three females — however, not with long but expressly short heads (Picture 1). Their occurrence in the whole material of the investigation is not considerable, not more than 0,2 per cent. It seems to us that they got to the population of Gyoma by immigration.

Picture 1. Nordoid female

Cromagnoids

We have to take into consideration three varieties of this group:

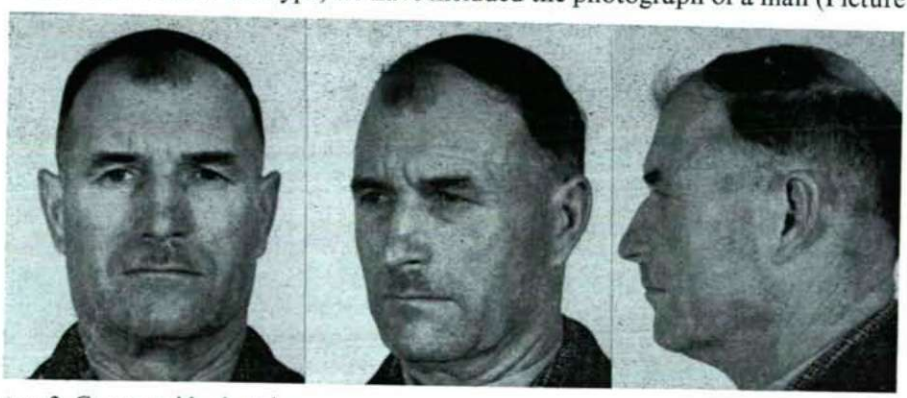
Cromagnoid-A : This is characterized by a big-medium or big stature, a long or medium-long head, broad face, straight or hooked nose, generally a rather light colour complexion.

Cromagnoid-B: Its characteristics are medium-sized stature, a short head, broad face, concave nose-line, and a light colour complexion.

Cromagnoid-C: A variety of dark colour complexion that came into being after the previous races became short-headed. This race is regarded by Henkey as a lowland type, as also the Turanoid (HENKEY, 1974).

In the material of our investigation, the characteristics of 19 males, as well as 21 females correspond to race Cromagnoid-A. These are partly of big, partly of big-medium stature. The colour of their eyes is blue or brownish-green, that of their hair is, however, darker brown than that of the classical Cromagnoid-A. Their occurrence can be observed both in the autochtonous and the non-autochtonous population of Gyoma. Together with the one Armenoid woman and the Cromagnoid-A woman mixed with Dinaroid character, their occurrence may be considered as 3 per cent.

In order to show this type, we have included the photograph of a man (Picture 2).



Picture 2. Cromagnoid—A male

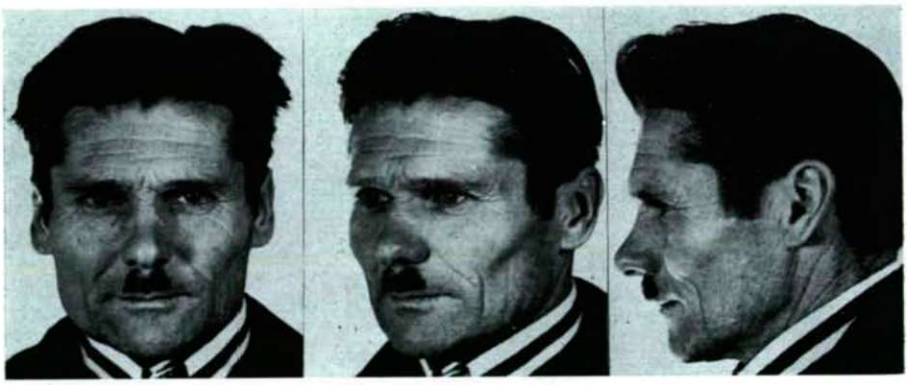
The type Cromagnoid-B is represented in the sample in considerable numbers. Their occurrence is at a rate of about 24 per cent.

Over twice as many females as males occur. According to stature, both among males and females, we have separated three kinds of variety: those of medium, small-medium, and small statures. This is justified by the fact that in our material of investigation a rather high percentage is represented by those belonging to the older age group in whose case, owing to the age-induced decrease in size, we had to reckon also with a smaller stature than the medium one that is characteristic of the type Cromagnoid-B. The eye colour is in every group blue or brownish-green, the hair colour, however, may be — apart from the brown shade of colour that is characteristic of the whole group — blond, as well, in the case of medium-statured females and small-statured males. The head is in 13 cases of males and 31 cases of females medium-long or long, in the other cases short or very short. The face is in every case broad or very broad while the distribution of statures is as follows: 48 males, 84 females are of medium stature; 38 males, 86 females are of small-medium stature; 14 males, 85 females are short. The varieties of this type are shown in pictures 3 and 4.

Picture 3. Cromagnoid—B female

Picture 4. Cromagnoid—B male

In the whole material of investigation the second most important component is the type Cromagnoid-C. This designation is first of all justified by the fact that every individual classified here is broad-faced and, at the same time, both in case of females and males, the hair may be blond and reddish-blond, as well. They could have been classified into other groups (Pamiric, Dinaric), too, because of their big or big-medium stature and short or very short head, but their light hair colour does not enable that classification. In the case of some females, a well-perceptible mixing of the Cromagnoid-C and Armenoid races is to be observed, as well. Their eye colour is similarly blue or brownish-green; blue eyes are, however, more frequent. Apart from the hair colours mentioned, a brownish shade may generally be observed. As seen in the photographs (Picture 5 and 6), as well, we do not find any Mongoloid characteristics in the members of this group. It is precisely for this reason that we did not consider it justified to use the attribute "Turanoid" for them.



Picture 5. Cromagnoid—C male

Picture 6. Cromagnoid—C female

The Mediterraneans

We were classifying three races into this category.

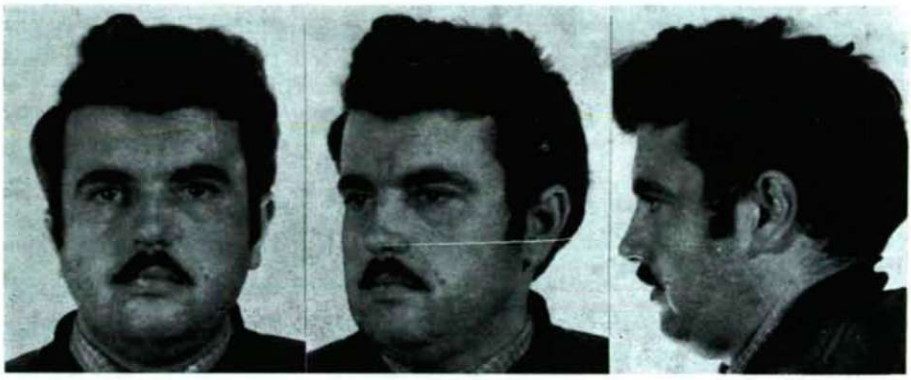
The Atlanto-Mediterraneans could be separated the most easily in the whole material of investigation. The big-medium or big stature, long head, narrow or very narrow face (mainly the latter), and a dark colour complexion are characteristic or their pure variety. The individuals included here by us correspond to the criterion of stature completely. The head may be not only long but also medium-long, and even, as it was, in the case of three women, short. The colour of hair was without exception brown or black. But, as observed in other samples, as well, the eye colour may be, besides brown, also greenish and even light blue, too. The Atlanto-Mediterraneans can be found in the whole population only in a comparatively low number, at a rate of not more than about 4 per cent (Pictures 7 and 8).

Picture 7. Atlanto-Mediterranean male

Picture 8. Atlanto-Mediterranean female

The gracile Mediterranean race is characterized by small or small-medium stature, a medium-long or long head, medium-broad or narrow face, and a dark colour complexion. In analysing our sample, we made the concession that we classified individuals of medium stature and short head among the gracile Mediterraneans.

In the samples investigated, in the case of both sexes, the ratio of those with medium or bigger stature, and those with short head is above 50 per cent. While the colour of the hair of males and females, considered by us as gracile Mediterraneans, is without exception brown or black, the colour of their eyes — as generally in the population east of the Tisza region — may be besides brown-blue, as well. A characteristic representative of the gracile Mediterraneans occurring at rate of 4.8 per cent in the sample is shown in picture 9.



Picture 9. Gracile Mediterranean male

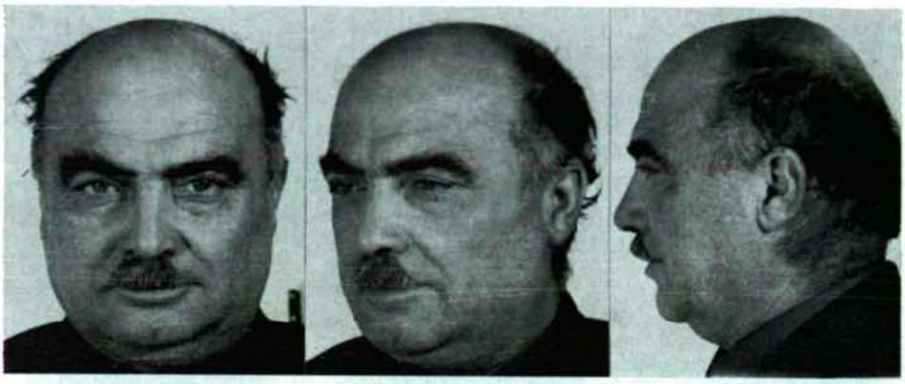
Indids

It may seem strange that analysing the population of a community in Hungary we mention the Indid race, too, among the Mediterraneans. It becomes, however, immediately obvious if we mention the fact that a few representatives of the gipsies living in Gyoma belong to this group.

Some races to be mentioned in the following (Alpine, Lapponoid, Pamiric, Armenoid, Dinaric, and undetermined brachycephalic ones) are generally named brachycephals of dark complexion (LIPTÁK, 1969). Above, however, — as seen — we spoke of individuals of dark complexion and short head, as well. We regard more correct, therefore, to deal with the individual races separately.

Alpic

Of its most typical representative small-medium stature, a short or very short head, medium-broad face and dark complexion, as well as a rounded occiput are characteristic. Although in our sample this race is represented a rate of more than 8 per cent, its representative could still not be demonstrated. It is therefore more correct to say that the effect of the Alpic race on this population is perceptible. In order to show what kind of character-complex this is, we are showing here the photographs of a man and a woman (Pictures 10 and 11). The blue colour of eyes is very frequent in this race, as well.



Picture 10. Alpic male

Picture 11. Alpic female

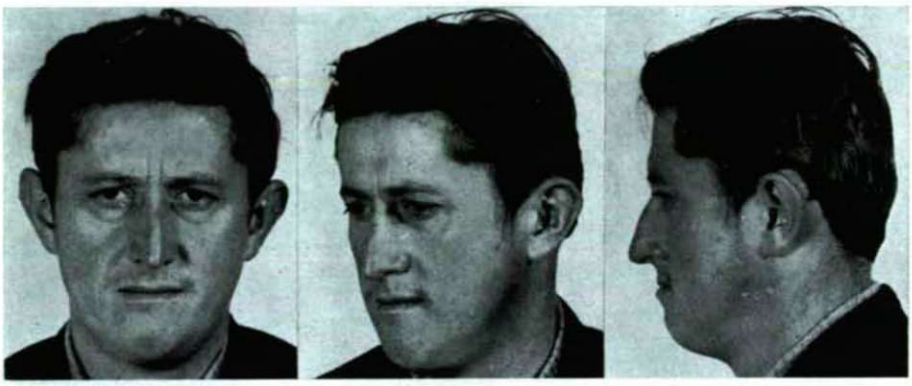
Lapponoid

We found one representative of this race with small stature, a short head, broad or very broad face (Picture 12), although at Vésztő (in the same County Békés) this type occurred at a rate of approximately 5 per cent (FARKAS—LIPTÁK, 1973).

Picture 12. Lapponoid male

Pamiric

This race is characterized by big-medium stature, a short head, narrow face, and a moderately protruding straight or hooked nose. Its separation in our material of investigation engendered a number of problems. Its frequency in Gyoma may be regarded as 8 per cent. We find necessary to note that a large part of the individuals, mostly those belonging to the younger age categories and classified in the Pamiric race, were tall. The colour of their hair is usually brown, their eyes are blue or brown. Their representatives are shown in pictures 13 and 14.



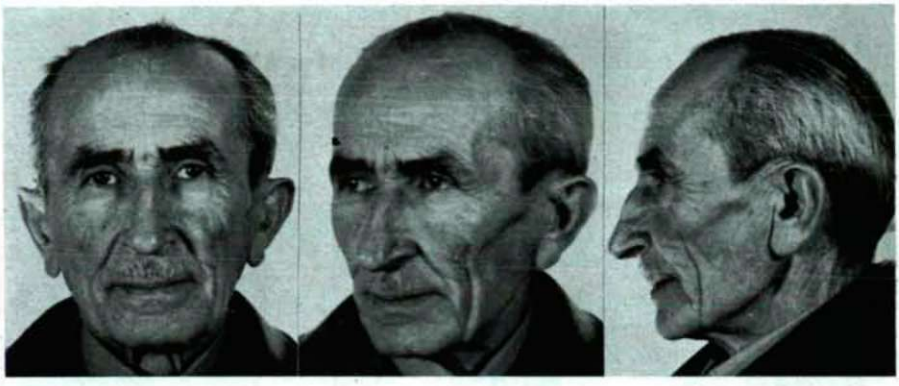
Picture 13. Pamiric male

Picture 14. Pamiric female

Armenoid

They are characterized by medium stature, a short head, narrow face, inclined forehead, strongly protruding hooked nose, and receding chin. In our material of investigation the size of their stature may belong to a wide range as we could not avoid classifying here taller individuals, too, because of the strong Armenoid predo-

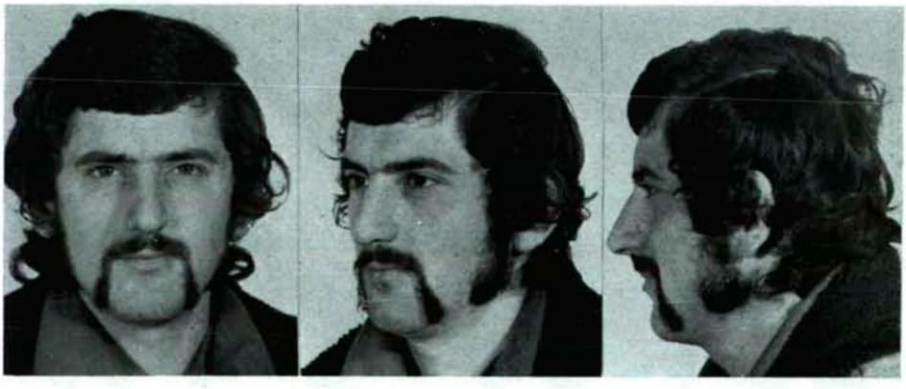
minance. This may have been why their presence in the population may amount to approximately 9 per cent. This comparatively large number, however, can be assigned also to the fact that we found the characteristic face profile of the Armenoid race, as with the Alpic race, in a great number of individuals. A really good representative of this character-complex could first of all be observed among males (Picture 15).



Picture 15. Armenoid male

Dinaric

This race is characterized by big-medium or big stature, a short head, narrow or medium-broad face, a strongly protruding and big nose, dark complexion, as well as a flat occiput. In our sample they may be found at a rate of approximately 3 per cent, and the individuals classified heree have all, except for a woman, big-medium or big stature, a short or very short head, narrow or medium-broad face, mostly blue eyes but they have particularly the males, very often brown eyes, and their hair is dark brown and black (Picture 16).



Picture 16. Dinaric male

Undetermined brachycephals

Approximately 10 per cent of the persons examined belong to this category. Their common trait is that they all have a short head. As, however, their other anthropological characters show some combinations that can not be identified with any of the races enumerated so far, we, have classified them into this group.

Turanoid

This race shows a mixture of characteristics of the great Europid and Mongoloid races and is characterized by a definite brachycephalism, medium body height, dark complexion, a medium-protruding straight or hooked nose, a low or high face and a convex occiput. The epicanthal fold occurs only rarely, but none the less, their face shows Mongoloid features.

Picture 17. Turanoid male

Mongoloid features occur comparatively rarely in the population of Gyoma. The three individuals shown (Pictures 17, 18 and 19), in fact, represent this race and that is not more than 0.2 per cent of the persons examined. Among school children, in our opinion, those with Mongoloid characters occur in considerably larger numbers.

Picture 18. Turanoid male

Table 1. Distribution of the individuals investigated according to taxonomical categories

Taxon	Male						Female						Together	
	Autochtonous		Non-autochtonous		Total		Autochtonous		Non-autochtonous		Total			
	n	p.c.	n	p.c.	n	p.c.	n	p.c.	n	p.c.	n	p.c.	n	p.c.
Nordoid total	—	—	—	—	—	—	1	0.2	2	0,8	3	0,4	3	0,21
Cromagnoid-A	12	2,7	7	2,9	19	2,7	12	2,3	12	4,7	24	3,1	43	2,95
Cromagnoid-B	66	14,6	34	14,2	100	14,5	188	36,6	67	26,4	255	33,3	355	24,36
Cromagnoid-C	76	16,8	68	28,5	144	20,9	111	21,6	60	23,6	171	22,3	315	21,62
Cromagnoid total	154	34,1	109	45,6	263	38,1	311	60,5	139	54,7	450	58,6	713	48,93
Atlanto-Mediterranean	16	3,5	12	5,0	28	4,1	21	4,1	13	5,1	34	4,4	62	4,26
Gracile Mediterranean	18	4,0	8	3,4	26	3,8	38	7,4	6	2,4	44	5,7	70	4,80
Indid	—	—	2	0,8	2	0,3	—	—	—	—	—	—	2	0,14
Mediterranean total	34	7,5	22	9,2	56	8,2	59	11,5	19	7,5	78	10,1	134	9,20
Alpic	45	10,0	18	7,5	63	9,1	39	7,6	23	9,0	62	8,1	125	8,58
Lapponoid	—	—	1	0,4	1	0,1	—	—	—	—	—	—	1	0,07
Pamiric	52	11,5	1	0,4	53	7,7	26	5,1	31	12,2	57	7,4	110	7,55
Armenoid	86	19,1	4	1,7	90	13,0	36	7,0	3	1,2	39	5,1	129	8,85
Dinaric	19	4,2	9	3,8	28	4,1	6	1,2	8	3,2	14	1,8	42	2,88
Brachycephalic	44	9,7	60	25,1	104	15,1	12	2,3	25	9,8	37	4,8	141	9,68
Brachycephalic total	246	54,5	93	38,9	339	49,1	119	23,2	90	35,4	209	27,2	548	37,61
Turanoid (Europomongolid total)	—	—	2	0,8	2	0,3	1	0,2	—	—	1	0,1	3	0,21
Undetermined	17	3,8	13	5,4	30	4,3	22	4,3	4	1,6	26	3,4	56	3,84
Total:	451		239		690		513		254		767		1457	

Picture 19. Turanoid female

In respect of the occurrence of the individuals with a Turanoid character-complex in the population of Hungary, opinions differ by reason of the most recent investigations (HENKEY, 1974; FARKAS—LIPTÁK, 1970).

Finally we have to mention a group of about 4 per cent, including some individuals who could not be analysed in detail owing to some surveying mistake or unsuccessful photography, and we cannot say anything about them, therefore, from a taxonomical point of view.

We have here no possibility of comparing the anthropological data of the settlements investigated so far in County Békés (FARKAS—LIPTÁK, 1965; FARKAS—VARGA, 1973; FARKAS—LIPTÁK, 1973), as well as the anthropological evaluation of Tápé, in the vicinity of Szeged, to those of Gyoma. At the same time, it seems more workable, too, that a synthesizing work should be prepared after the investigations of new settlements. It seems in any case necessary to mention that there is some difference between the single populations in respect of the single taxonomical groups. In certain respects however, we have found some conformity between the populations of Tápé and Gyoma.

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